What is claimed is:

1. A heat-conducting multilayer substrate comprising: at least a Cu circuitry layer of at least 99.999% purity and a ceramic layer.

2. A heat-conducting multilayer substrate comprising: a ceramic layer, a Cu circuitry layer having at least 99.999% purity provided on one side of said ceramic layer, and a high-purity metal layer provided on the other side of the ceramic layer.

3. A heat-conducting multilayer substrate according to claim 2, wherein the high-purity metal layer is a Cu metal layer of at least 99.999% purity.

4. A power module substrate comprising: an insulating substrate, a circuitry layer laminated on one side of said insulating substrate, a metal layer laminated on the other side of said insulating substrate, a semiconductor chip loaded onto the circuitry layer by means of solder, and a radiator joined to the metal layer; wherein, the circuitry layer and the metal layer are composed of copper of at least 99.999% purity.

5. A power module substrate according to claim 4, wherein the radiator is joined to the metal layer by solder, brazing or a diffused bonding.

6. A power module substrate according to claim 4, wherein the insulating substrate is composed of AlN, Al_2O_3, Si_3N_4 or SiC.

7. A power module substrate according to claim 5, wherein the insulating substrate is composed of AlN, Al_2O_3, Si_3N_4 or SiC.

8. A power module substrate according to claim 4, wherein the circuitry layer and the metal layer release stress within 24 hours at 100°C.

9. A power module substrate according to claim 5, wherein the circuitry layer and the metal layer release stress within 24 hours at 100°C.

10. A power module substrate according to claim 6, wherein the circuitry layer and the metal layer release stress within 24 hours at 100°C.

11. A power module substrate according to claim 4, wherein elongation during rupture of the circuitry layer and the metal layer is from 20% to 30% within the range of -40°C to 150°C.

12. A power module substrate according to claim 5, wherein elongation during rupture of the circuitry layer and the metal layer is from 20% to 30% within the range of -40°C to 150°C.

13. A power module substrate according to claim 6, wherein elongation during rupture of the circuitry layer and the metal layer is from 20% to 30% within the range of -40°C to 150°C.

14. A power module substrate according to claim 4, wherein the thickness of the circuitry layer and the metal layer is from 0.04 mm to 1.0 mm.

15. A power module substrate according to claim5, wherein the thickness of the circuitry layer and the metal layer is from 0.04 mm to 1.0 mm.

16. A power module substrate according to claim 6, wherein the thickness of the circuitry layer and the metal layer is from 0.04 mm to 1.0 mm.

17. A power module substrate according to claim 4, wherein the conductivity of the circuitry layer and the metal layer is at least 99% IACS.

18. A power module substrate according to claim 5, wherein the conductivity of the circuitry layer and the metal layer is at least 99% IACS.

19. A power module substrate according to claim 6, wherein the conductivity of the

circuitry layer and the metal layer is at least 99% IACS.

20. A power module substrate according to claim 4, wherein the average particle diameter of crystalline particles of the circuitry layer and the metal layer is from 1.0 mm to 30 mm.

21. A power module substrate according to claim 5, wherein the average particle diameter of crystalline particles of the circuitry layer and the metal layer is from 1.0 mm to 30 mm.

22. A power module substrate according to claim 6, wherein the average particle diameter of crystalline particles of the circuitry layer and the metal layer is from 1.0 mm to 30 mm.